

CLAIMS

1. A monitoring circuit comprising a capacitor, charging means for charging the capacitor, discharging means for discharging the capacitor, voltage comparing means for comparing a certain reference voltage with a charging voltage of the capacitor, thereby generating a signal for resetting an operation of a monitoring object when the capacitor is charged to have a certain voltage or more, and source voltage deciding means for monitoring a source voltage of the monitoring object and resetting the operation of the monitoring object when the source voltage of the monitoring object is equal to or lower than a certain voltage.

2. A monitoring circuit comprising a capacitor, charging means for charging the capacitor, first discharging means for discharging the capacitor, second discharging means for discharging the capacitor, voltage comparing means for comparing a certain reference voltage with a voltage of the capacitor, thereby generating a signal for resetting an operation of a monitoring object when the capacitor is charged to have a certain voltage or more, and source voltage deciding means for monitoring a source voltage of the monitoring object and resetting the operation of the monitoring object when the source

voltage of the monitoring object is equal to or lower than a certain voltage.

3. The monitoring circuit according to claim 1 or 2, wherein the source voltage deciding means is constituted by a comparator and the charging means is constituted by a current source.

4. The monitoring circuit according to claim 2, wherein the first discharging means is constituted by a current source and the second discharging means is constituted by an analog switch, and either or both of the first and second discharging means is/are operated to invert an output of the voltage comparing means, thereby resetting the monitoring object when the source voltage of the monitoring object is equal to or lower than a certain voltage.

5. The monitoring circuit according to claim 2, wherein the first discharging means is constituted by a current source and the second discharging means is constituted by an N-type MOS transistor.

6. The monitoring circuit according to claim 1 or 2, wherein the voltage comparing means is constituted by a window comparator.

7. The monitoring circuit according to claim 1 or 2, wherein the voltage comparing means is constituted by a hysteresis comparator.

8. A semiconductor device comprising the monitoring circuit according to claim 1 or 2 in which the capacitor is provided on an outside of the semiconductor device.